

In The Claims:

This listing of claims replaces all prior versions and listings of claims for this application.

1-34. (Cancelled).

35. (New) A method of producing a tissue, comprising placing a molding support within a body cavity for a time and under conditions sufficient for non-vascularized tissue comprising myofibroblasts to form on the molding support.

36. (New) The method of claim 35, further comprising removing the molding support from the body cavity.

37. (New) The method of claim 35 further comprising separating the tissue from the molding support.

38. (New) The method of claim 37, further comprising everting the tissue.

39. (New) The method of claim 35, wherein the molding support is placed into the body cavity by surgical implantation.

40. (New) The method of claim 35, wherein the tissue is covered by non-thrombogenic mesothelial cells.

41. (New) The method of claim 35, wherein the molding support comprises a biodegradable matrix.

42. (New) The method of claim 35, wherein the molding support is a foreign body.

43. (New) The method of claim 42, wherein the molding support comprises silicone.

44. (New) The method of claim 35, wherein the molding support is a tubular molding.

45. (New) The method of claim 44, wherein the tissue is vascular.

46. (New) The method of claim 35, wherein the tissue is blood vessel.

47. (New) The method of claim 46, wherein the blood vessel is selected from the group consisting of an artery, an arterio-venous shunt and an access fistula.

48. (New) The method of claim 35, wherein the tissue is suitable for use as a substitute blood vessel.

49. (New) The method of claim 35, further comprising grafting the tissue into a recipient.

50. (New) The method of claim 39, wherein the tissue is autologous relative to the recipient.

51. (New) The method of claim 39, wherein the recipient is human.

52. (New) The method of claim 35, wherein the body cavity is a peritoneal cavity.

53. (New) The method of claim 35, further comprising maintaining the non-vascularized tissue in a frozen state.

54. (New) The method of claim 35, wherein the molding support is a tube and wherein the method further comprises placing the tube into the body cavity using a prosthetic device that comprises:

an outer elongated tubular member having perforations or a permeable layer to permit passage of cells and fluid into and out of the tubular member;

an inner elongated member removably insertable in the outer elongated member and comprising the tube around which or part of which vascular or non-vascular tissue can grow; and

an external portion which is maintained on the skin surface or subcutaneously and through which the inner elongated member can be removed from the outer elongated member.

55. (New) The method of claim 54, wherein the outer elongated tubular membrane is comprised of silicone.

56. (New) The method of claim 54, wherein the perforations are about 2 mm in diameter.